

GE EX2000 Digital Exciter

This five-day course begins with a review of the fundamentals of AC power followed by a review of semiconductor fundamentals. AC generator types and operations are also discussed. Major generator components are explained, followed by a description of the governor control system. In the final portion, the EX2000 digital exciter is explained, including exciter operation, software and hardware structures, how to operate the programmer, keyboard functions, operating modes, and running diagnostic tests.

I. Fundamentals of AC Power

- Magnetic Fields
- AC Waveforms
- Phase Relationships
- Resistance in AC Circuits
- Inductance in AC Circuits
- Capacitance in AC Circuits
- Power in AC Circuits

II. Semiconductor Fundamentals

- Atomic Review
- Extrinsic Semiconductors
- Diodes
- Transistors
- Silicon Controlled Rectifiers
- Thyrite

III. AC Generators

- AC Generator Theory
- Types of AC Generators
- AC Generator Operating Characteristics
- Detailed Operation
- Concepts of Voltage Control
- Three-Phase Systems

IV. Major Generator Components

- AC Generators
- Types of AC Machines
- AC Generator Components
- Three-Phase Generation

V. Governor Control System

- System Functions
- Governor Components
- Governor Operation
- Parallel Operation

VI. EX2000 Exciter

- System Overview
- Installation
- Exciter Operation IX.